OFFICE OF CIVILIAN DEFENSE
WASHINGTON, D.C.

CIVIL AIR PATROL

OPERATIONS MEMORANDUM)
NO. 13)

NATIONAL HEADQUARTERS
WASHINGTON, NOVEMBER 16, 1942

PREVENTION OF DAMAGE TO AIRCRAFT FROM HIGH WINDS

1. In an effort to prevent damage from high winds to aircraft parked on the ground, the Commanding Officers of Civil Air Patrol Operating Bases and Stations will require the following procedure, which is patterned after that developed by the Army Air Forces, to be observed whenever practicable:

a. All large flat objects which may be lifted by high wind will be securely tied down. Stakes or tie-down rings and ropes for tie-down of aircraft will be made available and a tie-down area will be designated.

b. Exposed aircraft not regularly used will be adequately tied down.

c. The Operations Officer will be charged with the responsibility of notifying all concerned whenever weather reports and forecasts or local weather conditions indicate the probability of high winds occurring.

d. As soon as a warning of the approach of high winds is received:

(1) If considered necessary, all flying will be suspended and flights aloft in the vicinity will be grounded or directed to proceed to other fields away from the storm area.

(2) Security measures will be immediately taken, calling upon all needed personnel to assist in tying down exposed aircraft, closing hangar doors, windows, etc.

(3) All exposed aircraft will be adequately tied down. One-half inch rope will be used to tie down aircraft of medium or light weights, and one-inch rope will be used on heavy aircraft.

(4) All airplanes equipped with brakes should have the brakes applied and locked. All airplanes should have controls locked or otherwise secured.

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Airplanes having sliding inclosures should have the inclosures closed and fastened. Airplanes equipped with doors should have all doors closed and fastened. The wheels of all airplanes should be securely chocked.

(5) Preparation for violent wind conditions will begin as soon as practicable to prevent personnel from being unnecessarily exposed to the hazards of blowing objects and of lightning. In thunderstorms the most violent surface wind conditions very frequently begin from five to fifteen minutes before the accompanying rain.

(6) The safest place for personnel, during lightning discharges, is generally conceded to be in metal enclosed structures, such as hangars. If avoidable, personnel will not be stationed in aircraft during high winds.

2. This Memorandum is intended solely to deal with the protection of aircraft on the ground from damage by winds caused by purely local disturbances which are not subject to accurate long range forecasting. This Memorandum should not be construed to affect action in pursuance of prearranged hurricane evacuation plans which endeavor to protect aircraft by removing them from the path of a large disturbance whose movement can be forecast for a considerable length of time.

3. The following local indications are helpful in the forecasting of high winds accompanying thunderstorms:

a. Clouds. A broken or overcast very high cirro-stratus deck will generally precede thunderstorm conditions by several hours. The formation, or prior presence, of cumulus clouds beneath the high cirro-stratus is the next indication. Swelling of these lower clouds into cumulo-nimbus indicates the beginning of actual thunderstorm conditions. It is to be noted that, as long as the tops of cumulus clouds are sharp and well-defined, no thunderstorm exists; but as soon as the top of any large cumulus cloud begins to attain a shredded indistinct outline, then a thunderstorm is forming at that point. Increasing numbers and extent of cumulus clouds with corresponding increase in high cirrus clouds is a good indication of thunderstorm conditions.

b. Surface Winds in Advance of a Thunderstorm. Generally, surface winds will blow towards a thunderstorm which is approaching a station. The occurrence of surface

winds which blow towards a thunderstorm, along with increasing wind velocity and light or moderate gustiness, is an excellent indication that the thunderstorm will pass over or very near the station.

c. Direction of Movement of Upper Clouds. In middle latitudes, thunderstorms generally move in the same direction as the winds aloft near the freezing level. This direction can be determined by noting the direction in which the "anvil" of shredded clouds at the top of a thunderstorm is pointing. The "anvil" will be just above the freezing level, and the clouds composing it will move with the wind at that level.

d. Comparative Darkness and Appearance of an Approaching Thunderstorm. This is a well-known, generally used index to the severity of a thunderstorm. Pilots aloft can almost always warn of thunderstorm approach, if they are familiar with the general appearance and conditions in advance of a storm. Indications which may be observed by pilots aloft are gustiness of surface winds and considerable turbulence at lower levels, from five to fifteen miles ahead of the forward path of the storm. Pilots aloft are also in an excellent position to note the general appearance, extent, and direction of movement of the storm. Pilots should always note these conditions and assist in warning of thunderstorm approach.

By direction of National Commander JOHNSON:

Harry H. Blee

HARRY H. BLEE
Colonel, Air Corps
Operations Officer